Selected Abstracts from the June Issue of the European Journal of Vascular and Endovascular Surgery

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A Prospective Evaluation of Cerebral Infarction following Transcervical Carotid Stenting with Carotid Flow Reversal

Leal J.I., Orgaz A., Fontcuberta J., Flores A., Doblas M., Garcia-Benassi J.M., Lane B., Loh C., Criado E. Eur J Vasc Endovasc Surg 2010;39:661-6.

Objective: Cerebral embolisation constitutes the main source of complications during transfemoral carotid artery stenting (CAS) and is associated with a high incidence of silent brain infarction. The goal of this study is to evaluate the incidence of new ischaemic cerebral lesions following transcervical CAS with carotid flow reversal for neuroprotection.

Materials and Methods: Thirty-one consecutive patients underwent transcervical CAS with carotid flow reversal. A stroke scale and diffusion-weighted magnetic resonance imaging (DW-MRI) were performed within 24 h before and after the procedure. DW-MRI studies were compared blindly by two independent neuroradiologists. New hyper-intense DW signals were interpreted as ischaemic infarcts. The progress of all patients was followed for at least 30 days following intervention.

Results: All procedures were technically successful. Nineteen (61%) patients were symptomatic Mean carotid flow reversal time was 22 min. There were no major adverse events at 30 days. All patients remained neurologically intact without increase in the stroke scale. Thirty subjects had paired DW-MRI studies. Post-procedural DW-MRI ischaemic infarcts were found in four (12.5%) patients, all ipsilateral to the treated hemisphere and asymptomatic. During follow-up, all stents remained patent and all patients remained stroke-free.

Conclusions: These data suggest that transcervical carotid stenting with carotid flow reversal carries a low incidence of new ischaemic infarcts, significantly lower than that reported with transfemoral CAS. The transcervical approach with carotid flow reversal may improve the safety of CAS and has the potential to produce results comparable to those of carotid endarterectomy.

Percutaneous Access for Endovascular Aneurysm Repair: A Systematic Review

Malkawi A.H., Hinchliffe R.J., Holt P.J., Loftus I.M., Thompson M.M. Eur J Vasc Endovasc Surg 2010;39:676-82.

Introduction: Recent developments in aortic stent-graft technology have led to an increase in the use of wholly percutaneous endovascular aneurysm repair (P-EVAR). The literature was systematically reviewed to analyse the results of P-EVAR.

Methods: A systematic review of P-EVAR was performed using Ovid-MEDLINE in-process and other nonindexed citations and Ovid-MEDLINE and EMBASE (January 1991–July 2009). Primary outcomes reviewed were success rate and loco-regional complications. Secondary outcomes included; operative time, hospital stay, time to ambulation, blood loss and cost. Prospective randomised and controlled nonrandomised studies were included as were case series (retrospective and prospective). Case reports, letters, review articles and non-English language articles were excluded.

Results: Twenty-two papers were identified. These included randomised trials ($n = 1$); prospective nonrandomised ($n = 10$) and retrospective studies ($n = 11$). P-EVAR was attempted in 1087 patients (1751 groins). Overall success rate of percutaneous arterial closure was 92% (90.1–93.9, 95% CI). Access related complication rate was 4.4% (3.5–5.3, 95% CI). Seven studies provided data on access related complications in open access cohorts (O-EVAR). In these studies, P-EVAR was associated with fewer access related complications (RR 0 .47, 95% CI 0.28–0.78, $p = 0.004$). P-EVAR was associated with reduced operative time.

Conclusion: P-EVAR appears safe and effective in selected patients. Local access related complications were low. Further work is required to identify the most suitable candidates for P-EVAR.

Hybrid Treatment of Complex Aortic Arch Disease with Supra-aortic Debranching and Endovascular Stent Graft Repair

Antoniou G.A., El Sakka K., Hamady M., Wolfe J.H.N. Eur J Vasc Endovasc Surg 2010;39:683-90.

Background: Aortic arch disease has conventionally been the domain of open surgical repair. Hybrid open and endovascular repair has evolved as an alternative, less invasive, treatment option with promising results. A systematic literature review and analysis of the reported outcomes was undertaken.

Methods: An Internet-based literature search using MEDLINE was performed to identify all studies reporting on hybrid aortic arch repair with supra-aortic branch revascularisation and subsequent stent graft deployment. Debranching should involve at least one carotid artery, so that patients merely requiring a carotid-subclavian bypass were not included. Only reports of five patients or more were included in the analysis. Outcome measures were technical success, perioperative, 30-day and late morbidity and mortality.

Results: Eighteen studies fulfilled our search criteria, and data from 195 patients were entered for the analysis. No comparative studies of hybrid aortic arch repair with other conventional or innovative treatment modalities were identified. Complete arch repair was performed in 122 patients (63%). The overall technical success rate was 86% (167/195). The most common reason for technical failure was endoleak (9%, 17/195). Overall perioperative morbidity and mortality rates were 21% (41/195) and 9% (18/195), respectively. The most common perioperative complication was stroke (7%, 14/195). Four aneurysm-related deaths were reported during follow-up (2%). No long-term data on hybrid aortic arch repair were identified.

Conclusions: Hybrid repair of complex aortic arch disease is an alternative treatment option with acceptable short-term results. Stroke remains a frequent complication and mortality rates are significant. Further research with large comparative studies and longer follow-up is required.

Endografting in the Aortic Arch – Does the Proximal Landing Zone Influence Outcome?

Geisbüsch P., Kotelis D., Hyhlik-Dürr A., Hakimi M., Attigah N., Böckler D. Eur J Vasc Endovasc Surg 2010;39:693-9.

Objectives: To analyse early and midterm results of thoracic aortic endografting (TEVAR) in the aortic arch.

Methods: Between January 1997 and February 2009 178 patients received TEVAR in the aortic arch at our institution. This population was subdivided into four groups according to the proximal landing zone (LZ) classification in the aortic arch by Ishimaru et al. and a retrospective analysis regarding perioperative mortality, morbidity and endoleak formation was performed.

Results: The overall 30-day mortality rate was 14% with no statistical significant difference between LZ's 0–3 ($p = 0.274$). Renal insufficiency (hazard ratio (HR) 2.5; $p = 0.0119$), age >75 years (HR 3.1; $p = 0.0019$) and emergency procedures (HR 8.9; $p < 0.0001$) were independent predictors of death. There was no significant difference regarding type I ($p = 0.07$) or type III ($p = 0.49$) endoleaks between the proximal LZs, but a significant difference regarding the development of type II endoleaks ($p = 0.01$).

Conclusions: The present study showed no influence of the proximal LZ on perioperative mortality and morbidity rate. Furthermore it did not influence relevant (type I/III) endoleak formation.

Information Communicated with Patients in Decision Making about their Abdominal Aortic Aneurysm

Knops A.M., Ubbink D.T., Legemate D.A., de Haes J.C.J.M., Goossens A. Eur J Vasc Endovasc Surg 2010;39:708-13.

Objectives: To explore what kind of information surgeons communicate with patients diagnosed with an abdominal aortic aneurysm, and if the information provided regarding the disorder and treatment options available complies with legal requirements.

Methods: Dutch vascular surgeons sound-recorded consultations with their patients. Recordings were scored using a checklist based on ethical considerations and five statutory categories of information on: (1) the disorder, (2) procedure and aim of surgery, (3) consequences and risks of surgery, (4) watchful observation and (5) individual prognosis regarding state of health. Each category was represented by several information items, which were scored dichotomously ('not mentioned' or 'mentioned'). A category was considered sufficiently addressed if at least one of its items was mentioned.

Results: Thirty-five consultations were recorded (13 patients with aneurysmal diameter <5.5 cm and 22 with diameter ≥5.5 cm). In a minority of recordings, all five categories were addressed: 1/13 (8%) and 9/22 (41%), respectively. None of the information items was discussed consistently in every recording. Although most patients were informed about the